

Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of the Claims

Claims 1-21 (cancelled)

22. (currently amended) A transparent, non-elastomeric, polythiourethane/urea material comprising the reaction product of:

- (a) at least one (α , ω)-diiso(thio)cyanate polysulfide prepolymer ~~having a number average molecular weight ranging from 100 to 3000 gmol⁻¹~~, said prepolymer being free from disulfide (-S-S-) linkage[₂]; and
- (b) at least one aromatic primary diamine, in an equivalent molar ratio amine function/iso(thio)cyanate function (NH_2/NCX , $\text{X}=\text{O}$, S) ranging from 0.5 to 2, said aromatic primary diamine being free from disulfide (-S-S-) linkage,

wherein the (α , ω)-diiso(thio)cyanate polysulfide prepolymer is the reaction product of at least one cycloaliphatic or aromatic diiso(thio)cyanate and at least one (α , ω)-diol or dithiol prepolymer, said (α , ω)-diol or dithiol prepolymer being a polysulfide or a mixture of polysulfides.

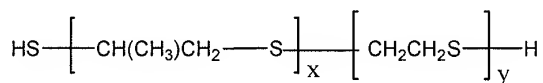
23. (previously presented) The transparent, non elastomeric polythiourethane/urea material of claim 22, wherein the equivalent ratio NH_2/NCX ranges from 0.90 to 1.10.

24. (previously presented) The material of claim 22, wherein the equivalent ratio NH_2/NCX ranges from 0.93 to 0.95.

Claims 25-27 (cancelled)

28. (currently amended) The material of claim 22, wherein the polysulfide or mixture of polysulfides is selected from the group consisting of:

- Prepolymers of formula :

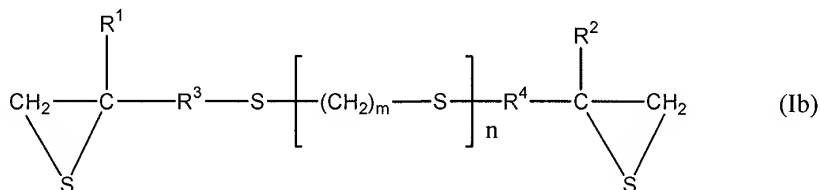


in which x and y are chosen such that the two following conditions are simultaneously satisfied:

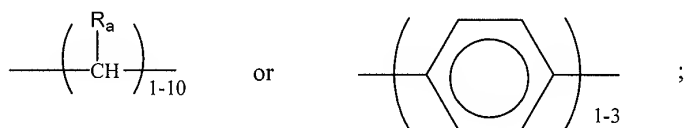
-the number average molecular weight of the prepolymer ranges from 100 to 3000 g mol^{-1} ; and

-the prepolymer is a polysulfide;

-Prepolymers resulting from the polymerization of diepisulfides of formula:



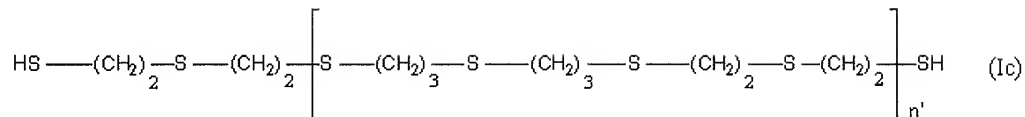
in which R^1 and R^2 are, independently from each other, H, alkyl, aryl, alkoxy, alkylthio or arylthio; R^3 and R^4 are, independently from each other,



R_a designates H, alkyl, aryl, alkoxy, aryloxy, alkylthio or arylthio and, n is an integer from 0 to 4 and m is an integer from 1 to 6,

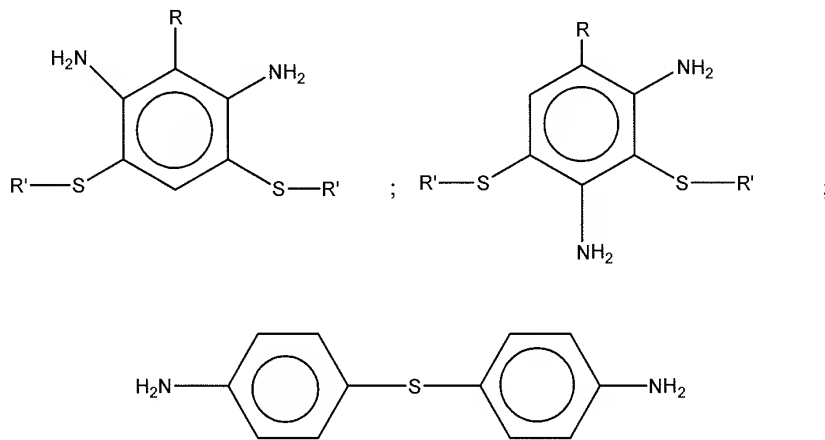
and

-Prepolymers of formula:



where n' is such that the number average molecular weight (\overline{M}_n) of the prepolymer ranges from 500 to 1500g mol⁻¹.

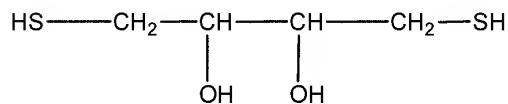
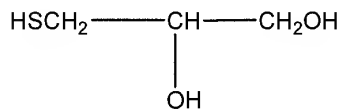
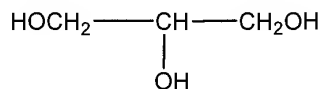
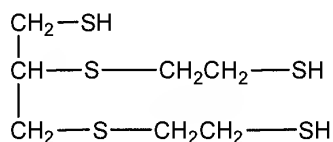
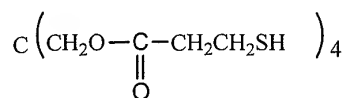
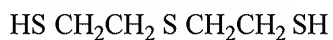
29. (previously presented) The material of claim 22, wherein the aromatic diamine contains at least one S atom in its molecule.
30. (previously presented) The material of claim 29 wherein the diamine is selected from

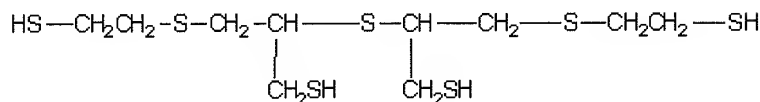
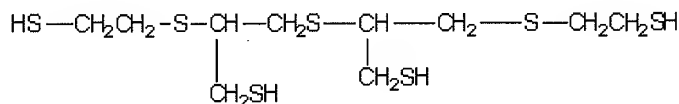
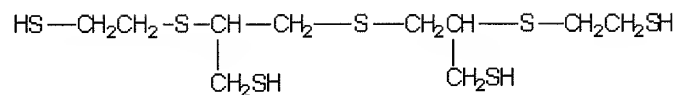


in which R is H or an alkyl group and R' is an alkyl group, and mixtures of the above diamines.

31. (previously presented) The material of claim 22, wherein the material is the reaction product of:
- a) said at least one (α , ω)-diisothiocyanate polysulfide prepolymer;

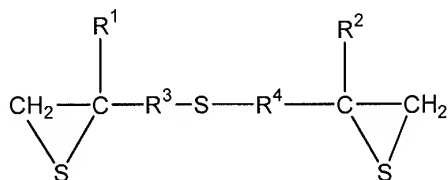
- b) said at least one aromatic primary diamine; and
- c) at least one di-, tri-, or tetra alcohol, or at least one di-, tri-, or tetra thiol, or a mixture thereof.
32. (previously presented) The material of claim 31, wherein the alcohols and thiols are selected from the groups consisting of:



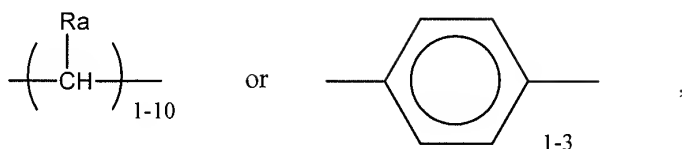


and mixtures thereof.

33. (previously presented) The material of claim 22 having a refractive index, n_D^{25} , higher than 1.53.
34. (previously presented) The material of claim 22 having a refractive index, n_D^{25} , of at least 1.55.
35. (previously presented) The material of claim 22 having a refractive index, n_D^{25} , of at least 1.57.
36. (previously presented) The material of claim 22, wherein the polysulfide is an hyperbranched polysulfide resulting from the polymerization of a diepisulfide of formula:

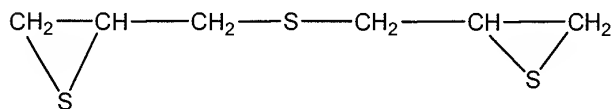


in which R^1 and R^2 are, independently from each other, H, alkyl, aryl, alkoxy, alkylthio or arylthio, R^3 and R^4 are independently from each other,



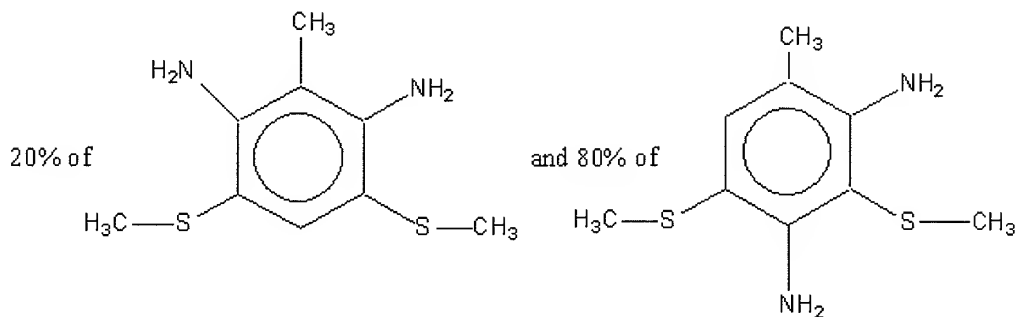
Ra designates H, alkyl, aryl, alkoxy, aryloxy, alkylthio or arylthio, with 2-mercaptoethyl sulfide (DMES).

37. (previously presented) The material of claim 36, wherein the diepisulfide has formula :



38. (previously presented) An optical article made from a material according to claim 22.
39. (previously presented) The material of claim 28, wherein n' is such that the number average molecular weight (\overline{M}_n) of the prepolymer ranges from 650 to 1350 g mol⁻¹.
40. (previously presented) The material of claim 22, wherein the prepolymer is the reaction product of at least one (α , ω) dithiol prepolymer.
41. (cancelled)
42. (previously presented) The material of claim 30, wherein R and R' are CH₃.

43. (previously presented) The material of claim 30, wherein the diamine is a mixture of by weight:



44. (cancelled).

45. (new) The material of claim 22, wherein the at least one (α , ω)-diiso(thio)cyanate polysulfide prepolymer has a number average molecular weight ranging from 100 to 3000 gmol^{-1} .
46. (new) The material of claim 22, wherein the at least one (α , ω)-diiso(thio)cyanate polysulfide prepolymer has a number average molecular weight ranging from 148 to 3000 gmol^{-1} .